Geology of Wildcliff

This is the fifth article in a series about creatures and features of Wildcliff, a private Nature Reserve in the Langeberg Mountains, founded in 2007 by Dr. Ian Giddy and his wife Jenny

Some researchers at the reserve study animals such as birds, snakes, frogs, insects, baboons and other mammals. (See www.wildcliff.org/research.) Other come from abroad to improve our understanding of the topography, the climate, soil and geology. A French student, Elodie Monnier, has conducted a study linking soil types to different fynbos vegetation. She has also helped us learn more about the rock formations of the Langeberg Mountains.

The mountain range that gives our area its beautiful setting is the Langeberg, running from Swellendam to Riversdale. The Langeberg forms part of the **Cape Fold Belt**. This is a very old mountain range, dating back about 300 million years.

Geologists classify rocks into three groups: igneous (from volcanic eruptions), sedimentaty (laid down from sediments) and metamorphic (marble or other rocks transformed under great pressure). The Cape Fold Belt is a folded sedimentary sequence of rocks stretching from Cape Town to Port Elizabeth. The rocks are generally sandstones and shales, with shales forming the valleys and the erosion-resistant sandstones forming the parallel mountain ranges, reaching a maximum height of 2325m at Seweweekspoortpiek.

The rocks were laid down as sediments when this area was a coastal delta, in the Ordovician (450ma) period, with the folding subsequently occurring in the Carboniferous and Permian periods during the merging of the supercontinent Pangaea. Even though the mountains are very old by Andean and Alpine standards, they remain steep and rugged, owing to the resistant nature of the quartzitic sandstones of the Table Mountain Group. The famous Table Mountain is comprised of hard igneous granite rocks of the Peninsula Formation of the Table Mountain Group.

Our mountains, although moderate in height by world standards, remain extremely majestic and dramatic to the eye. This is due in part to several geological factors. The ranges usually have few to no foothills and rise directly from the valley floor. The mountain's base is usually at or near sea-level. The ranges are generally steep and rugged: their quarzitic sandstone geology makes them very resistant to weathering.

The Cape is famous for its Proteas, Ericas and other fynbos plants. These are flora that can survive in nutrient-poor soil – soil that, over many eons, has had the natural fertilizers such as phosphates leached out of them. Poor soil, but a rich variety of flowers, all year round, with a background of rocky slopes and cliffs. We consider ourselves fortunate to enjoy this beautiful, largely unspoiled, natural environment – and we think it's worth protecting!

Our next article tells about microcrustaceans, water creatures adapted to specialized habitats of mountain rivers. What other subjects would you like to read about? You can reach us at 028 722 2633 or ian@wildcliff.org.

Why we call it “Wildcliff”